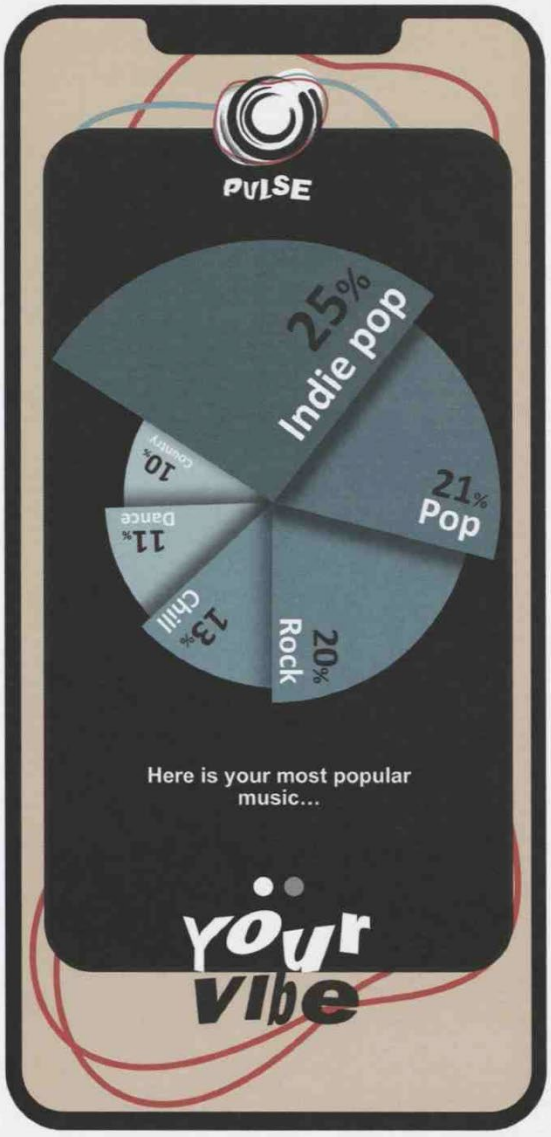
Candidate 2 evidence

DO NOT WRITE IN THIS MARGIN

Total marks — 80

Attempt ALL questions

1. Pulse is a music streaming app for smartphones. A screen from the app is shown below.



MARKS | DO NOT WRITE IN THIS MARGIN

1. (continued)

(a) The screen shows a user's most popular types of music listened to over a year.

(i) State the name of the chart used. 1

Pie chart

(ii) Explain why this chart is appropriate to communicate this information. 1

Because the information is given in percentages ~~to see which is most popular.~~

(b) Describe **three** ways the graphic artist has graphically communicated the most popular types of music on the screen. 3

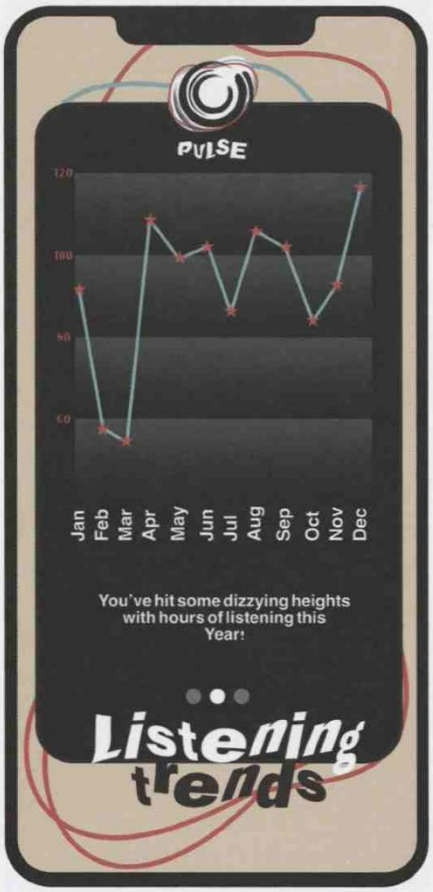
1. The segments with a higher percentage is biggest on the screen.
2. The larger percentage sectors have drop shadows to create depth to make them appear on top.
3. The colour becomes lighter from highest percentage to lowest percentage.

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

1. (continued)

A second screen from the app is shown below.



(c) This graph shows the number of hours a user listened to music each month.

(i) State the name of the graph used above. 1

line graph.

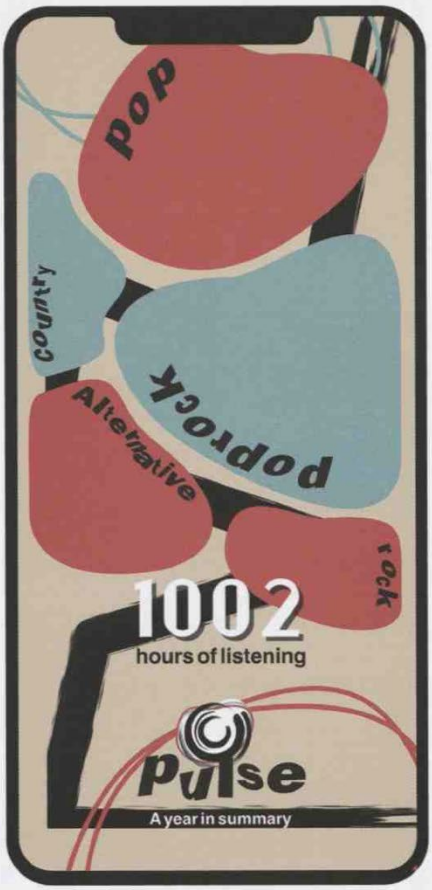
(ii) Explain why this graph is appropriate to communicate this information. 1

Because it shows a change over time.

MARKS | DO NOT WRITE IN THIS MARGIN

1. **(continued)**

A graphic layout showing another screen from the app is shown below.



(d) Describe **two** ways each of the following design elements and principles have been used in the layout:

(i) Depth 1. The text "1002" is on top of the shapes. 2

~~and it has a drop shadow.~~

2. ~~The coloured blotches are on top of the black~~

~~line.~~ The text "1002" has a drop shadow.

MARKS | DO NOT WRITE IN THIS MARGIN

1. (d) (continued)

(ii) Unity 1. The black line connects all of the coloured blotches together to lead the eye along the ~~SCE~~ screen. 2. The text in the blotches flow along the edge. ~~3. The colours are all flowing around each other but not touching touching.~~ teal 2

(iii) Contrast 1. The ~~blue~~ and pink are contrasting colours. ~~2. The white text contrasts with the black background~~ 2. The music genres text is a different ~~from~~ font from the rest of the text on the screen. 2

(e) Describe **one** way alignment has been used in the layout. 1

the text "1002" is larger but still fully justified with the text "hours of listening" underneath it.

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

2. A landscape design company has produced graphics for a new garden studio shown below.



preliminary graphic



promotional graphic

(a) (i) Explain the purpose of a promotional graphic. 1

To promote a product or idea to people

A digital version of the manual preliminary graphic is created.

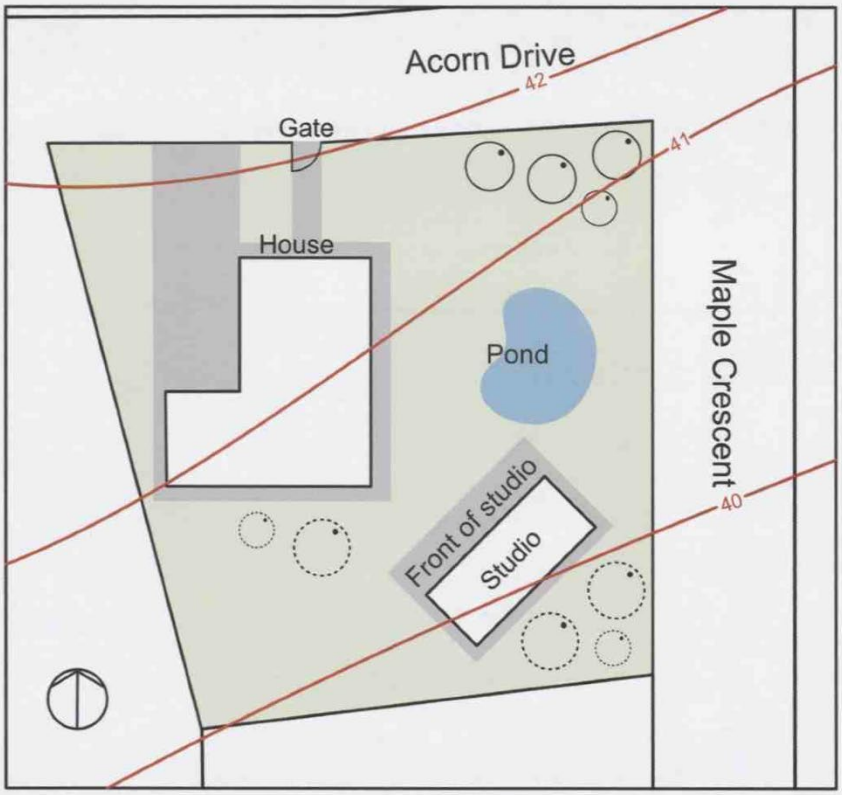
(ii) State the names of **two** input devices that could be used to convert the preliminary graphic into a digital file. 2

1. A mouse.
2. A computer.

MARKS | DO NOT WRITE IN THIS MARGIN

2. **(continued)**

A site plan showing the proposed position of a garden studio is shown below.



(b) State a scale commonly used for a site plan. 1

~~1:250~~ 1:1040

(c) Contours are shown in red on the site plan.

Explain the purpose of contours on a site plan. 1

To show the contours of the landscape. (hills etc).

MARKS | DO NOT WRITE IN THIS MARGIN

2. **(continued)**

The front of the garden studio faces the house on the plot.

(d) State the direction the front of the garden studio faces. 1

North-west.

(e) State the direction the pond is in relation to the house. 1

~~North~~ East.

The site plan was produced by a designer who works from home.

(f) Describe **two** advantages of remote working. 2

1. Employees can share files ~~without~~ remotley.

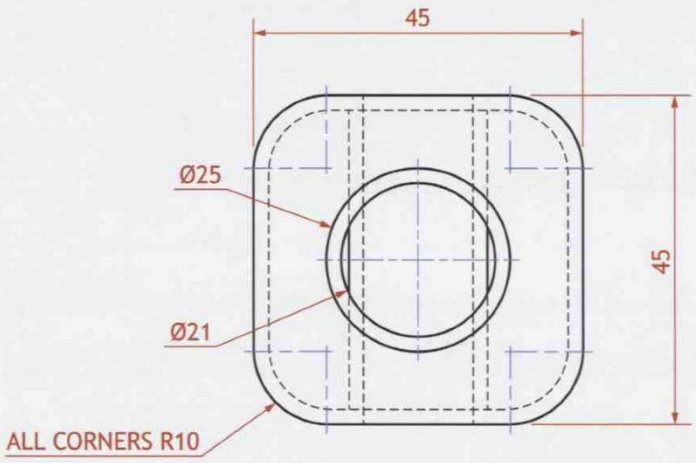
2. An office isn't needed.

[Turn over

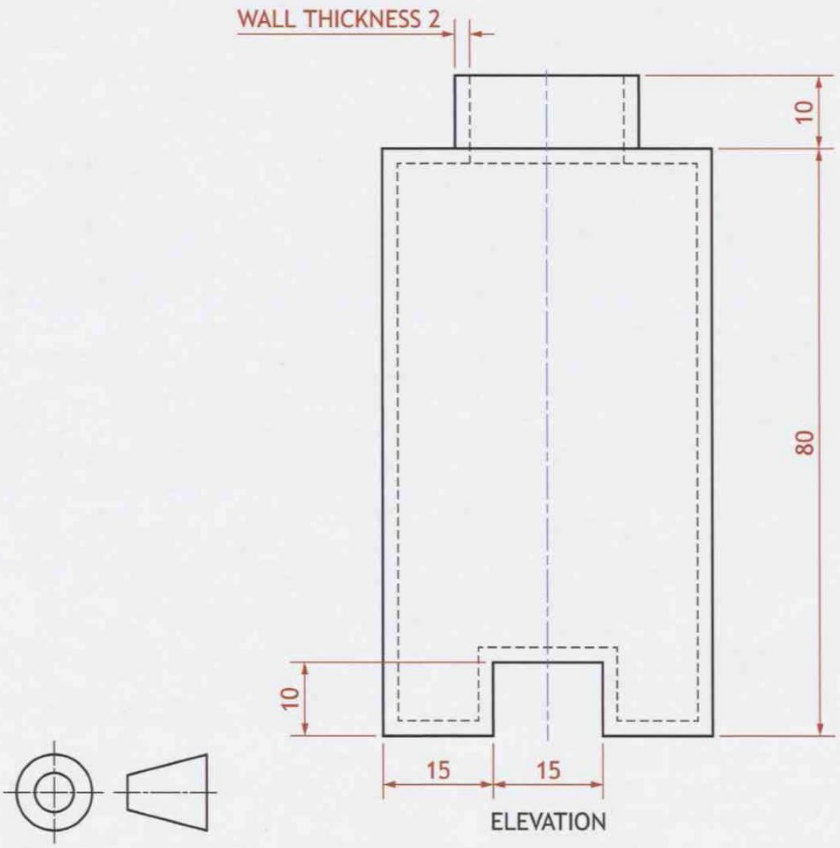
DO NOT WRITE IN THIS MARGIN

3. A company has created a new drinks bottle for their product line. It has two parts: a body and a lid.

An orthographic drawing of the body is shown below.



PLAN



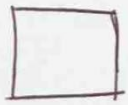
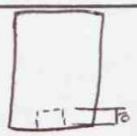
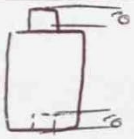
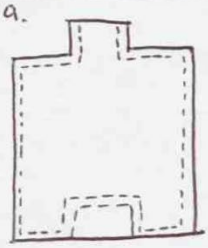
ELEVATION

MARKS | DO NOT WRITE IN THIS MARGIN

3. (continued)

(a) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the body.

You may use sketches to help support your answer. 6

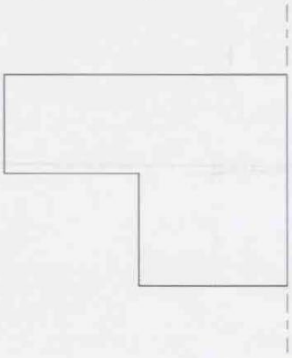
① Sketch a □45 square. ② Fillet each corner by R10	1  2 
③ Extrude the square by 30mm. ④ Sketch a □15 square at the centre of the bottom. ⑤ ~~Extrude~~ Subtract □15 square by 10mm	3  PLAN  ELEVATION 4 5 
⑥ Sketch a Ø25 circle at the top of the shape, in the centre. ⑦ Sketch a Ø21 circle inside of the Ø25 one. ⑧ Extrude the gap between the circles by 10mm.	6  7.  8 
⑨ Shell the full part, leaving a 2mm wall.	9. 

DO NOT WRITE IN THIS MARGIN

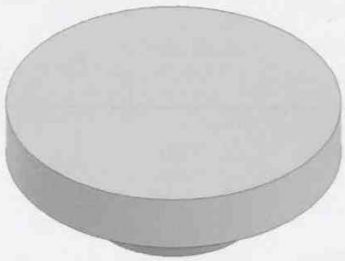
3. **(continued)**

The stages to create the 3D CAD model of the lid are shown below.

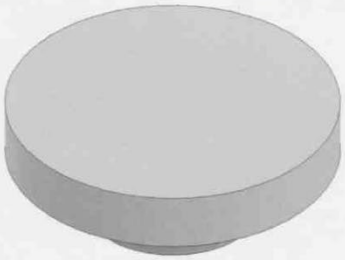
Stage 1



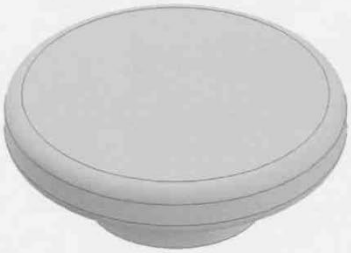
Stage 2



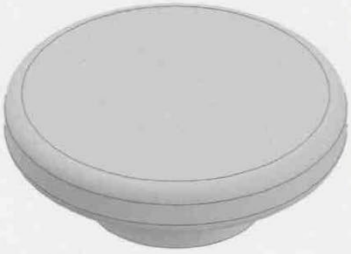
Stage 2



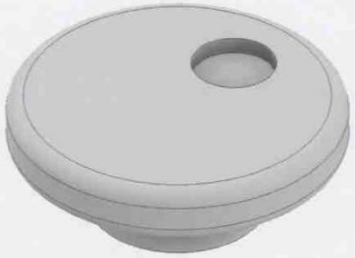
Stage 3



Stage 3



Stage 4



MARKS | DO NOT WRITE IN THIS MARGIN

3. (continued)

(b) (i) State the name of the 3D CAD command used to go from stage 1 to stage 2. 1

Revolve.

(ii) State the name of the 3D CAD edit used to go from stage 2 to stage 3. 1

fillet

(iii) State the name of the 3D CAD edit used to go from stage 3 to stage 4. 1

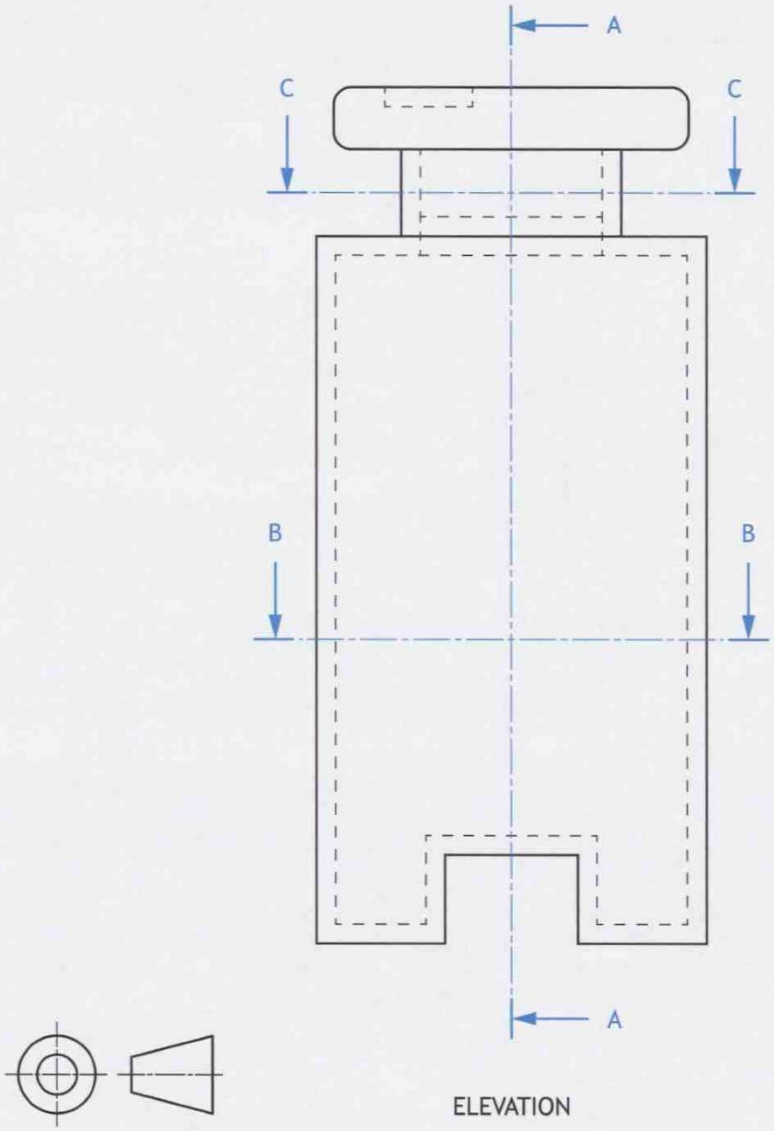
Subtract.

[Turn over

DO NOT WRITE IN THIS MARGIN

3. (continued)

The elevation of the assembled bottle is shown below.



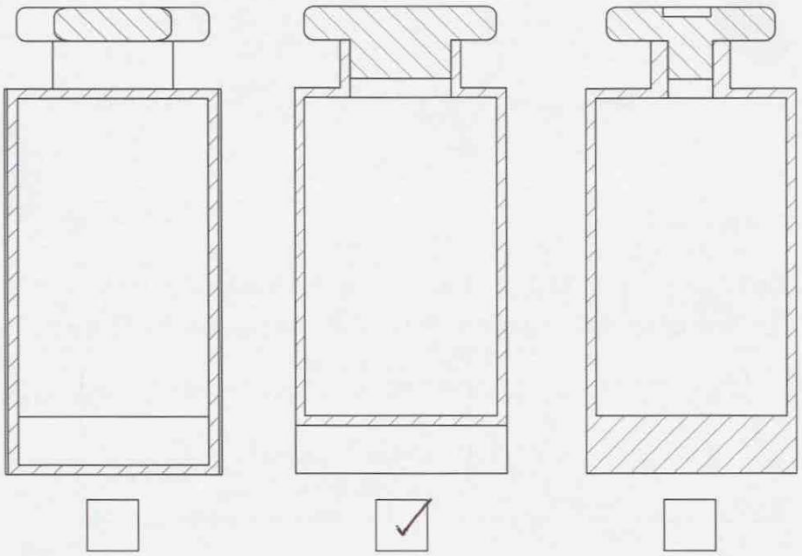
ELEVATION

3. (continued) MARKS DO NOT WRITE IN THIS MARGIN

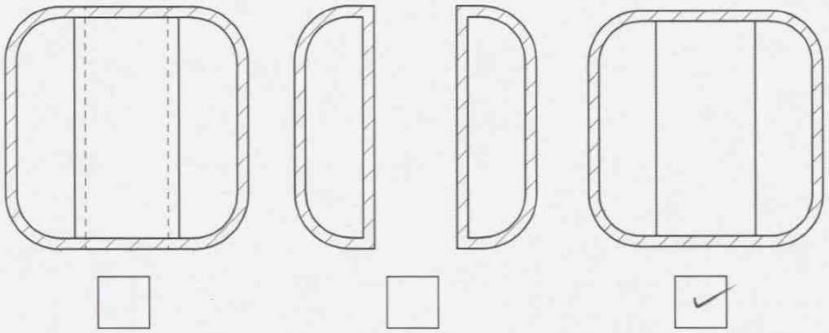
(c) Three sectional views projected from the elevation are shown below.

Identify the correct sectional view for each cutting plane by ticking (✓) a box below.

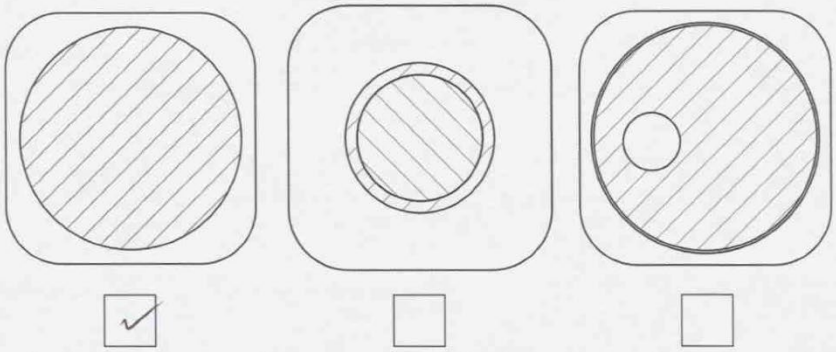
(i) Cutting plane A–A 1



(ii) Cutting plane B–B 1



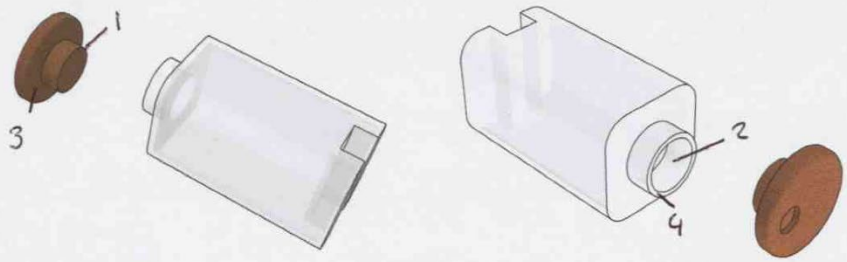
(iii) Cutting plane C–C 1



MARKS | DO NOT WRITE IN THIS MARGIN

3. **(continued)**

The bottle parts were assembled using 3D CAD assembly techniques.



(d) Describe, using 3D CAD constraints, how to assemble the bottle and lid.
You may annotate the graphic shown above to support your answer. **2**

Align points one and two then make points 3 and 4 flush with ~~one another~~ eachother.

MARKS | DO NOT WRITE IN THIS MARGIN

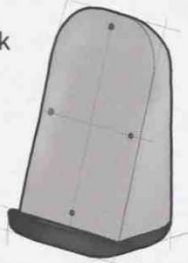
4. A designer has created manual preliminary sketches for a smartphone charging dock.

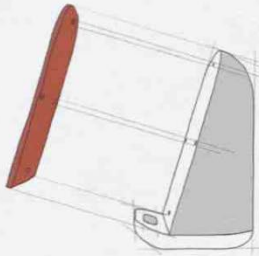
(a) Describe **two** reasons for creating preliminary sketches. 2

1. To show how a graphic idea would look once produced.
2. To use as a thumbnail.

The designer created more preliminary sketches using digital methods. Two of the preliminary sketches are shown below.

charging dock concept





dock with detachable face plate

(b) Describe **two** advantages of creating digital sketches over manual methods. 2

1. ~~They can be shared remot~~ They're quick to produce.
2. ~~There's less materials needed.~~ They can be accessed from anywhere.

(c) The designer displays their work in an online portfolio.

Explain **two** benefits to the designer of having their portfolio published online rather than being printed. 2

1. It can be done remotley.
2. It requires less materials.

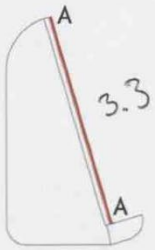
MARKS | DO NOT WRITE IN THIS MARGIN

4. (continued)

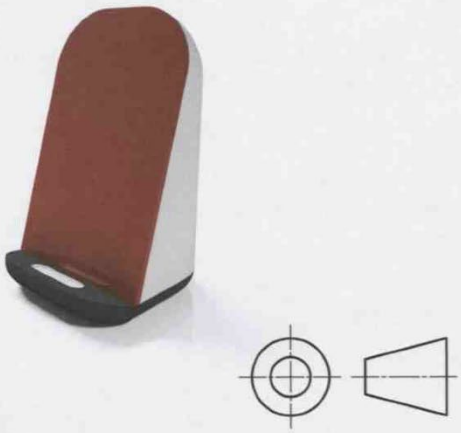
An orthographic drawing and rendered pictorial view of the charging dock are shown below.



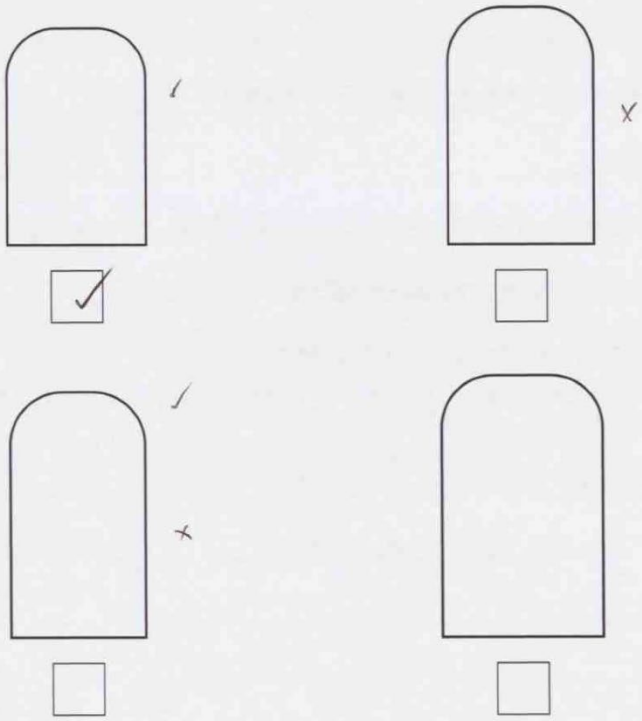
PLAN



ELEVATION



(d) Identify the correct true shape of the sloping surface A–A by ticking (✓) a box below. 1

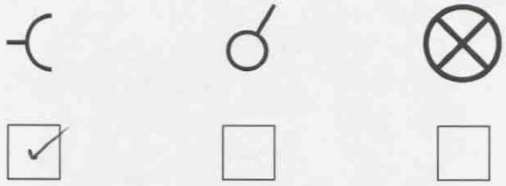


MARKS | DO NOT WRITE IN THIS MARGIN

4. (continued)

(e) The charging dock will be connected to a socket.

Identify the correct British Standard symbol for a socket by ticking (✓) a box below. 1



☑ ☐ ☐

[Turn over

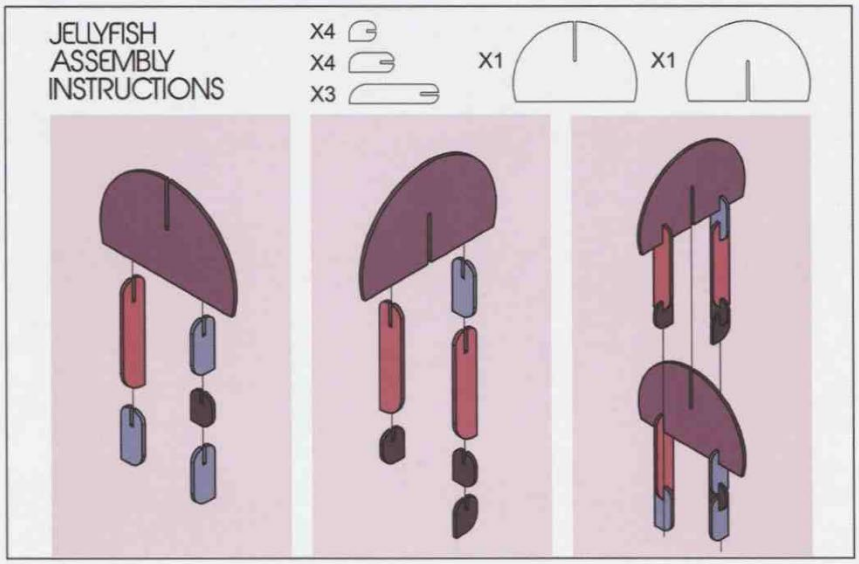
DO NOT WRITE IN THIS MARGIN

5. A manufacturer has produced a range of toys. A 3D CAD illustration of a jellyfish toy is shown below.



jellyfish toy

The assembly instructions for the jellyfish toy are shown below.

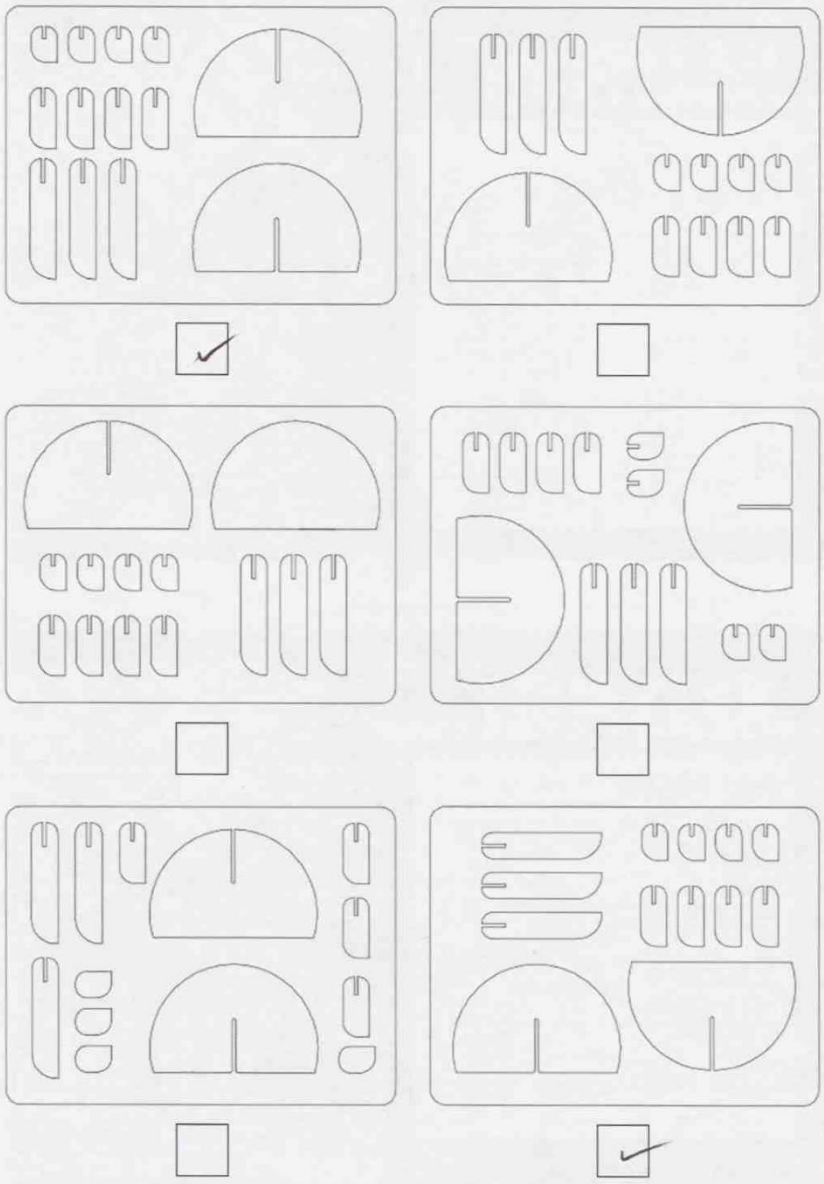


MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

(a) The jellyfish toy parts are cut out from one sheet of material. Some layouts are shown below.

Identify the **two** correct layouts by ticking (✓) **two** boxes. 2



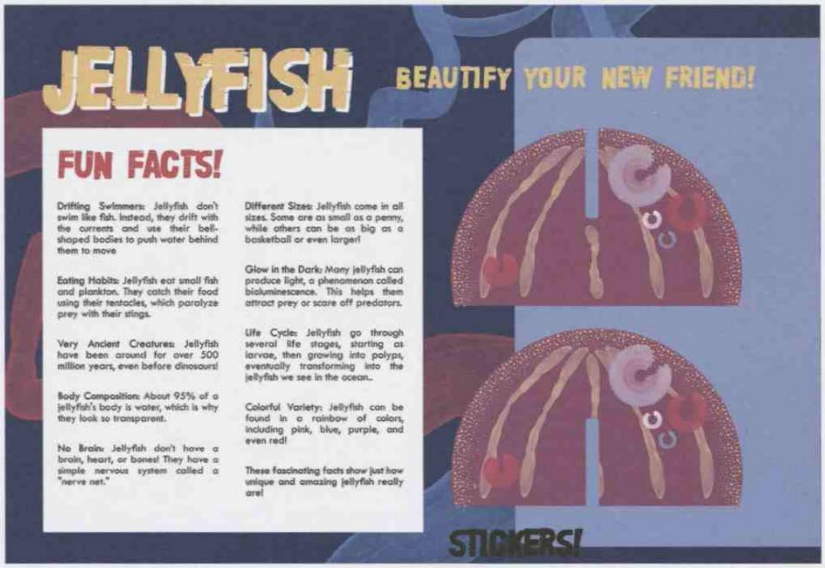
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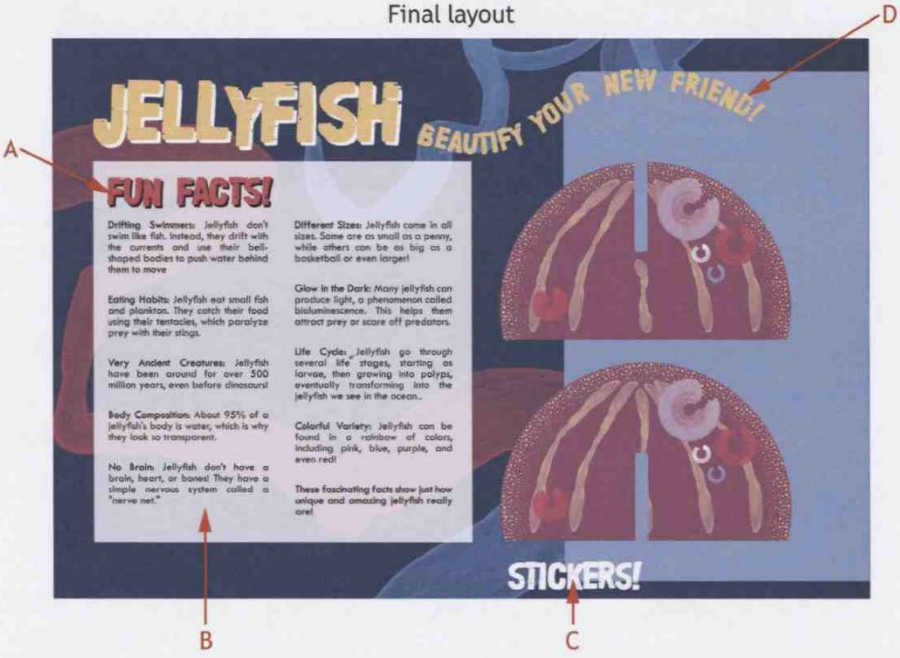
5. (continued)

The jellyfish toy is sold with a sticker fact sheet. The first draft, and final layout of the graphics are shown below.

Draft layout



Final layout



MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

(b) State the names of the DTP edits, A to D, applied to the final layout, shown opposite.

Do not refer to scaling or resizing in your answer, and you must give a different answer for each response.

(i) Edit A to the 'fun facts' text: Drop shadow — 1

(ii) Edit B to the white box: Tranceparency — 1

(iii) Edit C to the 'STICKERS' text: Reverse text — 1

(iv) Edit D to the 'BEAUTIFY YOUR NEW FRIEND' text: flow text along a path — 1

(c) Describe, giving **two** reasons, the effect yellow-orange has on the title. — 2

1. It's dominant on the page due to its contrasting with the purple background.
2. It's dominant on the page due to it being the largest text on the page.

Colours were selected by referring to the colour wheel.

(d) Complete the table below stating whether the colours are primary, secondary or tertiary. — 3

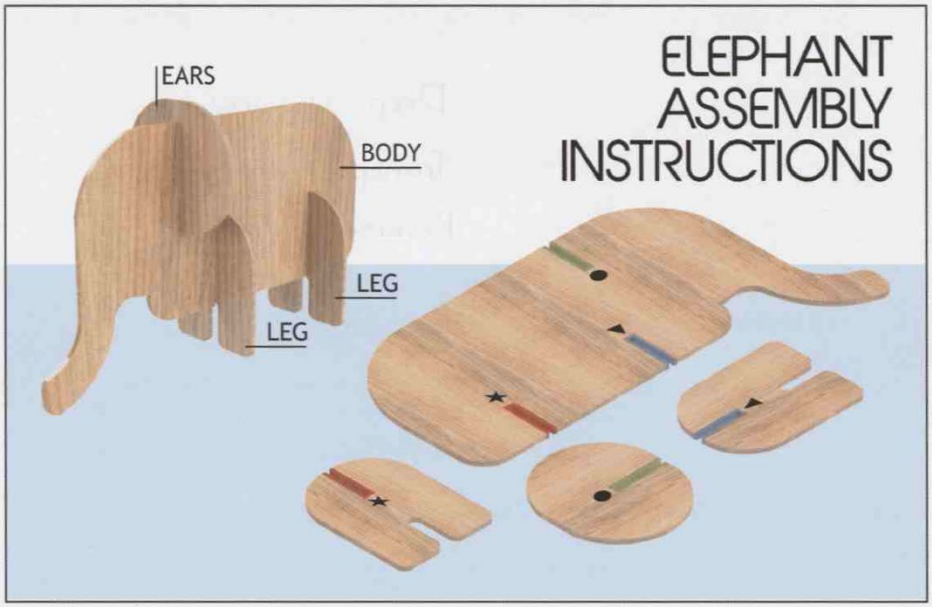
Colour	Primary, Secondary or Tertiary
Purple	Secondary
Blue	Primary
Yellow-orange	Tertiary

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

Assembly instructions for an elephant toy are shown below.



(e) Identify **two** features of the assembly instructions that make them easy to understand. **2**

1. The ~~image~~ pieces that go together are marked with the same colour.
2. The pieces that go together are also marked with matching shapes.

MARKS | DO NOT WRITE IN THIS MARGIN

6. A rendered 3D CAD illustration of a bottle holder is shown below.



(a) State the name of **two** CAD Illustration techniques that have been applied to the model. **2**

1. There's a light ~~sou~~ source.
2. Showed its function with another object.

(b) Explain **one** effect CAD illustration techniques have on 3D models. **1**

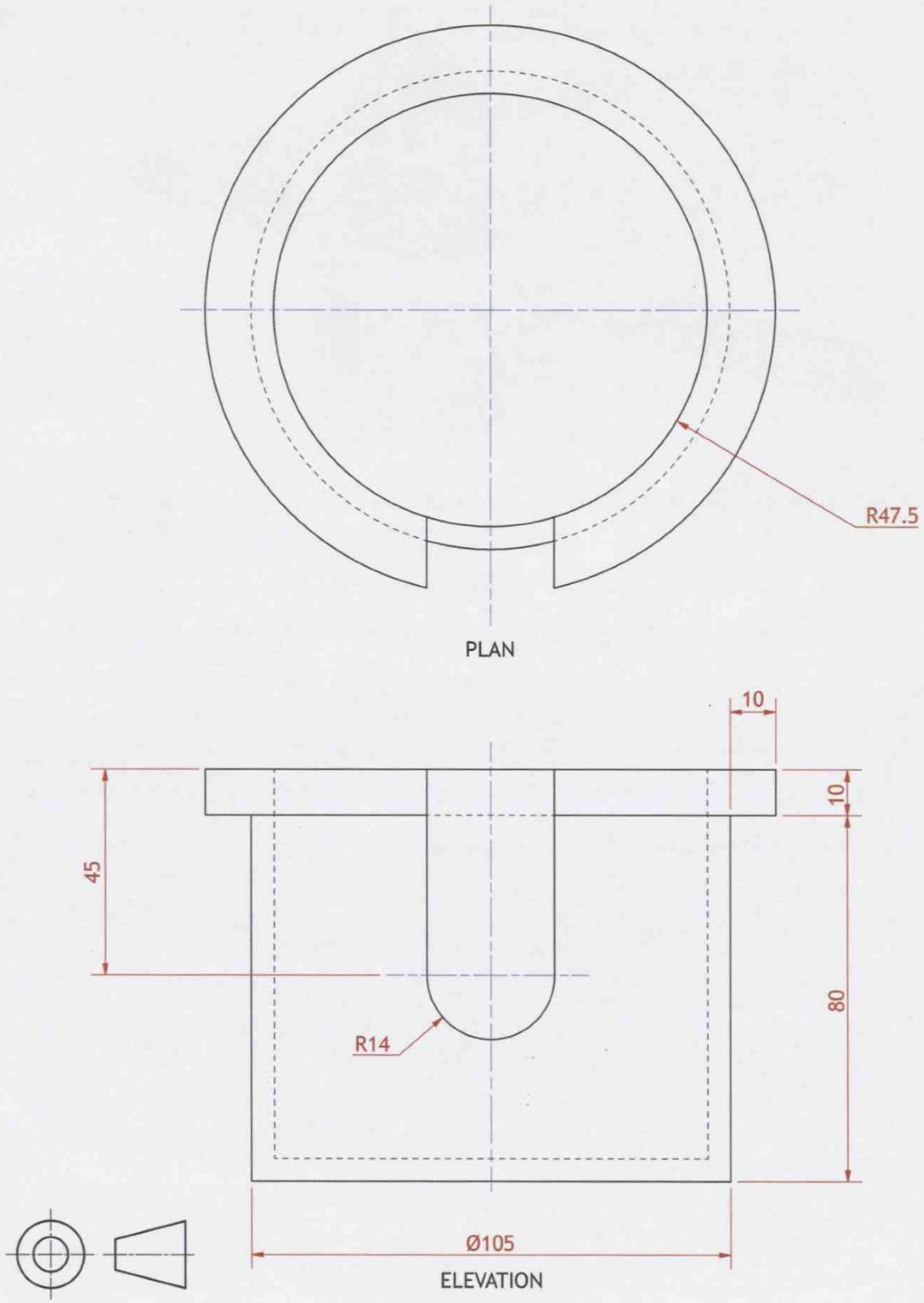
It can make objects appear less flat.

[Turn over

6. (continued)

DO NOT WRITE IN THIS MARGIN

An orthographic drawing of one of the bottle holder components is shown below.



MARKS | DO NOT WRITE IN THIS MARGIN

6. (continued)

(c) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the bottle holder.

You may use sketches to support your answer. 5

① Add a line to be used as an axis

② sketch a 62.5mm line going LEFT.

③ Add a 100mm line going straight down.

④ Add a line going back to the axis from the edge of line 10mm. (Also 10mm)

⑤ Add an 80mm line going straight down.

⑥ Connect that line to the axis.

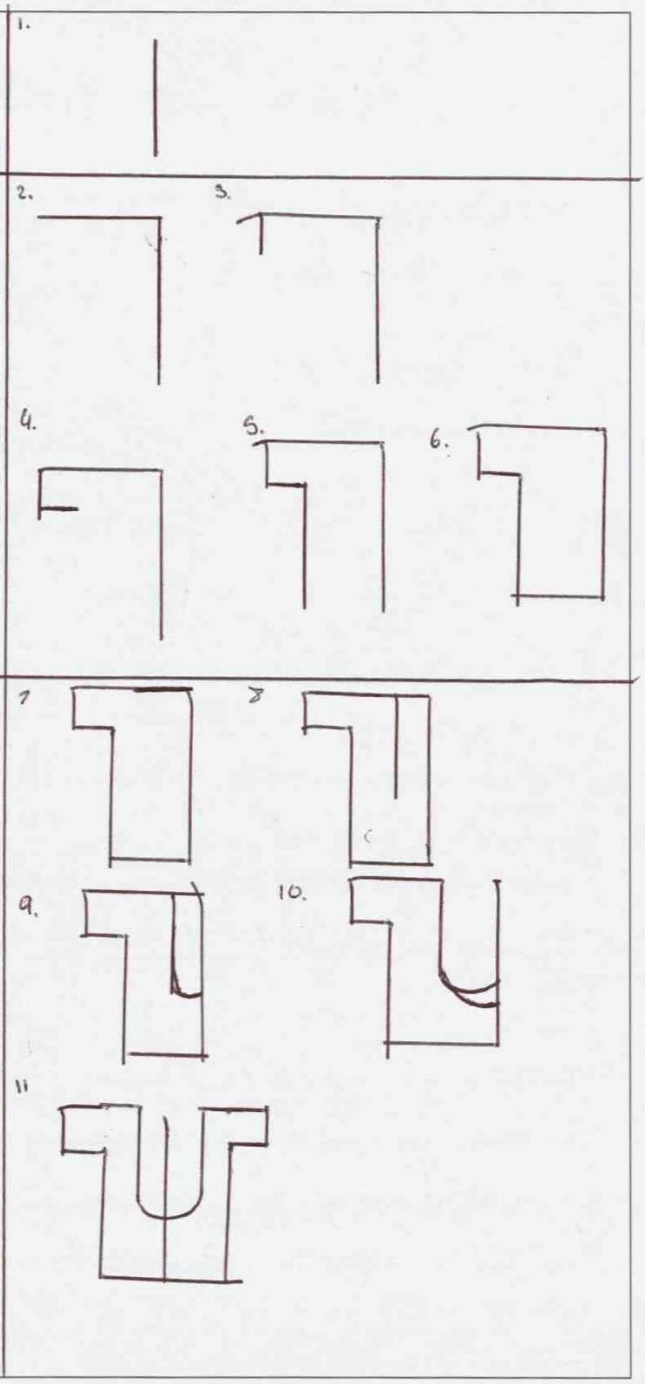
⑦ ~~Revolve~~ from the axis, sketch a 7mm line across to show where a hole would be.

⑧ Sketch a 45mm line goin down.

⑨ Sketch half of a R14 circle at the bottom.

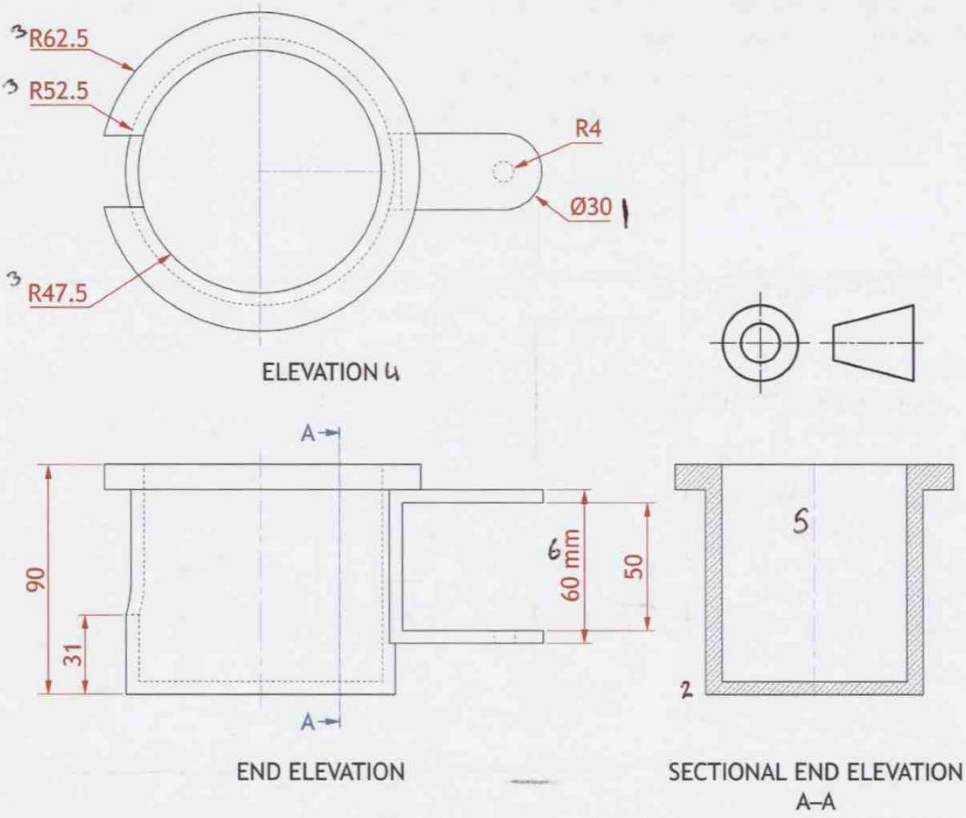
⑩ Trim the top 7mm line.

⑪ Revolve the full face around the axis line.



6. (continued) MARKS DO NOT WRITE IN THIS MARGIN

An orthographic drawing of the assembled bottle holder is shown below.



The orthographic drawing contains errors that do not conform to British Standards.

(d) Identify **six** errors in the orthographic drawing. 6

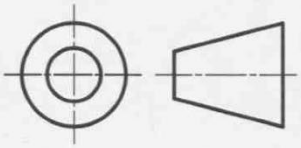
You may annotate the drawing to support your answer.

1. Should be marked as R15
2. The hatching should be all solid lines.
3. Should be diameter not radius being displayed
4. Should be labelled as plan.
5. Shouldn't be a centre line.
6. Shouldn't have the unit beside the size.

MARKS | DO NOT WRITE IN THIS MARGIN

6. **(continued)**

A title block will be added to the final orthographic drawing. The title block will include the symbol shown below.



(e) (i) Describe the purpose of this symbol. 1

To show the drawing is 3rd angle projection.

(ii) State **three** other pieces of information that should be included in a title block. 3

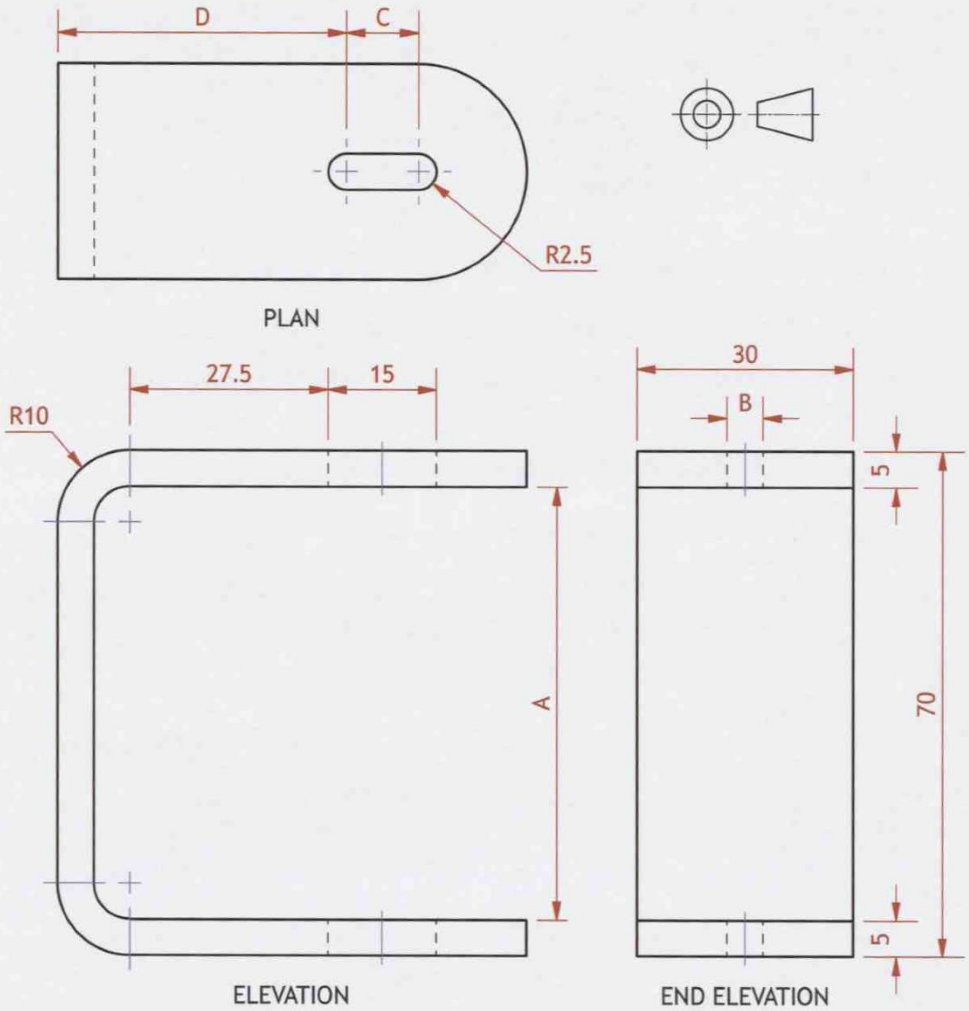
1. What the unit of measurement is.
2. The date produced.
3. The authors name.

[Turn over

6. (continued)

MARKS | DO NOT WRITE IN THIS MARGIN

An updated orthographic drawing of another component from the bottle holder is shown below.



(f) Calculate the missing dimensions, A to D, from the orthographic drawing. 4

A = 60 mm

B = 5 mm

C = 10 mm

D = 37.5 mm

[END OF QUESTION PAPER]